~~SECRET~~

~~CONFIDENTIAL~~

h-40604

16 JAN 1959

Lt. General J. D. O'Connell
Chief Signal Officer
Department of the Army
Washington 25, D. C.

Dear Jimmy:

My office has a long-standing requirement for a small battery which can be recharged with a minimum of effort after long periods of disuse. The research engineers at the [redacted] have devised a photogalvanic battery which appears to be rechargeable merely by exposure to sunlight, and the Company has approached your engineers at USAERDL, as well as my office, with a request for sponsorship of further study. [redacted] estimates that a one-year $[redacted] program will bring this battery to the laboratory prototype stage.

25X1
25X1
25X1

Informal conversations with Mr. David Linden of the Power Sources Division at Ft. Monmouth have encouraged my engineers to believe that a joint program to develop such a battery would be to our mutual benefit, since the Army's requirements in this field are quite similar to ours.

I would appreciate your views regarding a joint program effected either through two separately sponsored phases, [redacted]

25X1
25X1

Sincerely,

Dist: R&D Subj File
OC-E Chrono
R&D Chrono
EP Chrono

[redacted]
Director of Communications

25X1

OC-E/R&D-EP/WJS:mjr (13 Jan 59
rewritten HMM/mv 16 Jan 59

~~CONFIDENTIAL~~
~~SECRET~~

December 23, 1958

TECHNICAL GUIDELINES

PHOTOGALVANIC CELL RESEARCH

1. These technical guidelines cover research investigations on photogalvanic cell systems such as Ag/$FeCl_3$.aq./Pt,Ag. These investigations shall include:

a. The study of the reactions occurring in photogalvanic cell systems and the evaluation of the potentialities of those systems for the efficient conversion of solar and nuclear energy into electronic energy.

b. Investigations into the mechanisms of the electrode reactions, their rates as a function of the intensity of the incident radiation and their spectral sensitivity.

c. Studies of the electrode potentials and their dependence upon light intensity, wavelength, current drain and other operating conditions.

d. Exploration of other photochemical, radiochemical and supplementary electrochemical reactions and eventual selection of the most suitable photo- and nuclear-galvanic electrodes resulting from these investigations.

e. The use of these electrodes in the construction of experimental cells and the subsequent testing of the cells with respect to their electrical characteristics under various operational conditions.

2. The Contractor shall conduct other pertinent studies as mutually agreed upon by the Contractor and the Contracting Officer or his authorized representatives.

Prepared by the Power Sources Division,
U.S.A. Signal Research and Development Laboratories
Fort Monmouth, New Jersey